

Project overview

The NFS MORE trial examines the use of a wide range of soil amendments and compares these to the use of bagged nutrients. The rotation follows a typical farm rotation based around combinable cropping with sugar beet. The experiment is a factorial design, with three replicates, that received either a single dose (diminished) application or repeated rotationally (augmented) additions of turkey manure (ca. 8 t/ha), green waste compost (ca. 35 t/ha) or paper crumble (ca. 50 t/ha).

Recent findings have demonstrated that incorporating soil amendments (turkey manure, paper crumble and green waste compost) have an impact on nutrient supply and availability and improved crop yields associated with specific soil amendment approaches.



New Farming Systems

Further information

Visit niab.com or email: nathan.morris@niab.com

The New Farming Systems Project

is managed by NIAB TAG in conjunction with an independent advisory group and supported by The Morley Agricultural Foundation and The JC Mann Trust. The NFS project also contributes to a range of other research programmes.



NEW FARMING SYSTEMS

Soil amendments – Manure and Organic Replacement Experiment (MORE)

The New Farming Systems (NFS) project is a series of experiments and system demonstrations. The project aims to explore ways of improving the sustainability, stability and output of conventional arable farming systems. The research takes place on a sandy loam soil at Morley in Norfolk and started in 2007, with an additional study added in 2011.



New Farming Systems

Soil amendments – Manure and Organic Replacement Experiment (MORE)

This study examines the use of a wider range of soil amendments and compares these to the use of bagged nutrients. The rotation follows a typical farm rotation based around combinable cropping with sugar beet. The experiment is a factorial design, with three replicates, that received either a single dose (diminished) application or repeated rotationally (augmented) additions of turkey manure (ca. 8 t/ha), green waste compost (ca. 35 t/ha) or paper crumble (ca. 50 t/ha). Further detail of the treatments and the design is presented in the following table; in total the experiment has ten treatments.

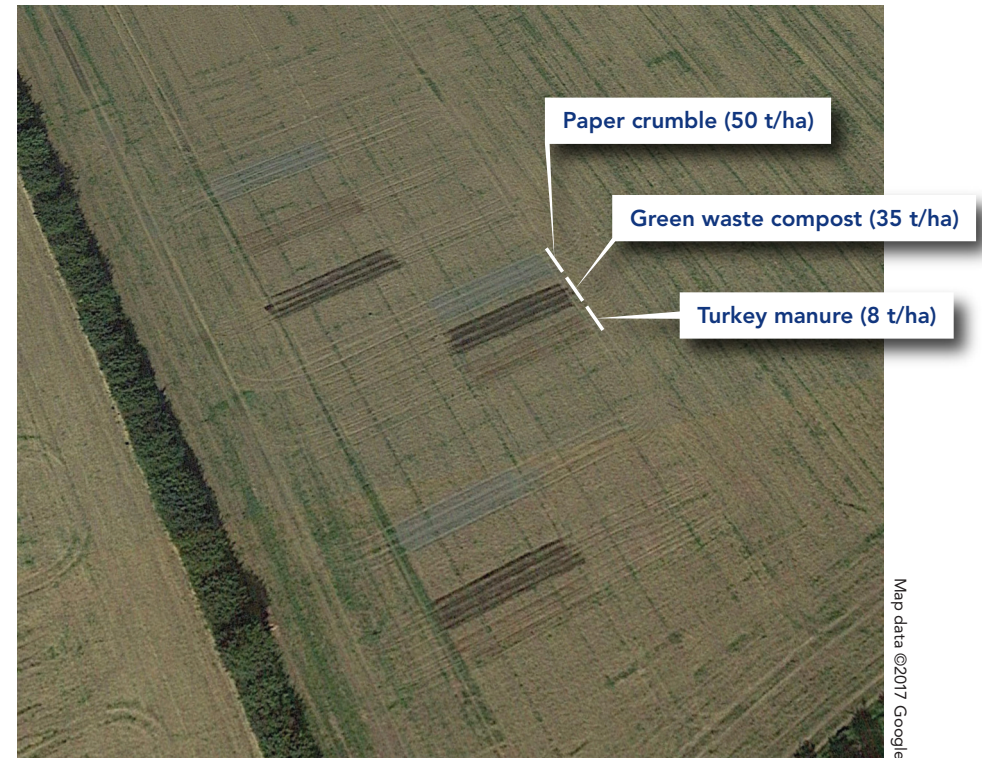
Treatment and rotational progression details

| Cropping and harvest year | | | | | | | | | | | | | | |
|---------------------------|---|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|-------------------|------|---|-----|
| Rotation | | 2012 (Year 1) | 2013 (Year 2) | 2014 (Year 3) | 2015 (Year 4) | 2016 (Year 5) | 2017 (Year 6) | 2018 (Year 7) | 2019 (Year 8) | 2020 (Year 9) | 2021 (Year 10) | | | |
| Augmented | ✓ | wwt | sbt | speas | ✓ | wwt | wosr | wwt | ✓ | sbt | sbly | soat | ✓ | wwt |
| Diminished | ✓ | wwt | sbt | speas | | wwt | wosr | wwt | | sbt | sbly | soat | | wwt |

✓ = Amendments applied

Cropping key:

wwt (winter wheat), sbt (sugar beet), speas (spring peas), wosr (winter oilseed rape), sbly (spring barley), soat (spring oat)



NIAB TAG soil amendments trial – post-harvest application of organic materials, September 2017.

REP 2

| | | | | | | | | | |
|------------|---------------|---------------|------------|---------------|------------------------|---------------|---------------|---------------|-----------|
| Untreated | Green Compost | Turkey Manure | Untreated | Paper Crumble | Untreated + Bagged P+K | Paper Crumble | Green Compost | Turkey Manure | Untreated |
| Diminished | Diminished | Diminished | Diminished | Diminished | Augmented | Augmented | Augmented | Augmented | Augmented |

REP 3

| | | | | |
|---------------|------------|---------------|------------|---------------|
| Turkey Manure | Untreated | Paper Crumble | Untreated | Green Compost |
| Diminished | Diminished | Diminished | Diminished | Diminished |

REP 1

| | | | | | | | | | |
|---------------|-----------|---------------|------------------------|---------------|---------------|------------|------------|---------------|---------------|
| Paper Crumble | Untreated | Turkey Manure | Untreated + Bagged P+K | Green Compost | Turkey Manure | Untreated | Untreated | Green Compost | Paper Crumble |
| Augmented | Augmented | Augmented | Augmented | Augmented | Diminished | Diminished | Diminished | Diminished | Diminished |

REP 3

| | | | | |
|-----------|---------------|------------------------|---------------|---------------|
| Untreated | Paper Crumble | Untreated + Bagged P+K | Green Compost | Turkey Manure |
| Augmented | Augmented | Augmented | Augmented | Augmented |